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POWERMATIC®

# Operating Instructions and Parts Manual
# 18-inch Variable Speed Drill Press
## Model 2800

*for serial # 7040001 and up*

162920

**WALTER MEIER (Manufacturing) Inc.**

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**Part No. M-1792800**
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# Warranty and Service

Walter Meier (Manufacturer) Inc., warrants every product it sells. If one of our tools needs service or repair, one of our Authorized Service Centers located throughout the United States can give you quick service. In most cases, any of these Walter Meier Authorized Service Centers can authorize warranty repair, assist you in obtaining parts, or perform routine maintenance and major repair on your POWERMATIC® tools. For the name of an Authorized Service Center in your area call 1-800-274-6848.

### MORE INFORMATION

Walter Meier is consistently adding new products to the line. For complete, up-to-date product information, check with your local Walter Meier distributor, or visit powermatic.com.

### WARRANTY

POWERMATIC products carry a limited warranty which varies in duration based upon the product.

*Warranty reverts to 1 Year if above products are used for commercial, industrial or educational purposes*

### WHAT IS COVERED?

This warranty covers any defects in workmanship or materials subject to the exceptions stated below. Cutting tools, abrasives and other consumables are excluded from warranty coverage.

### WHO IS COVERED?

This warranty covers only the initial purchaser of the product.

### WHAT IS THE PERIOD OF COVERAGE?

The general POWERMATIC warranty lasts for the time period specified in the product literature of each product.

### WHAT IS NOT COVERED?

The Five Year Warranty does not cover products used for commercial, industrial or educational purposes. Products with a Five Year Warranty that are used for commercial, industrial or education purposes revert to a One Year Warranty. This warranty does not cover defects due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and-tear, improper repair or alterations, or lack of maintenance.

### HOW TO GET SERVICE

The product or part must be returned for examination, postage prepaid, to a location designated by us. For the name of the location nearest you, please call 1-800-274-6848.

You must provide proof of initial purchase date and an explanation of the complaint must accompany the merchandise. If our inspection discloses a defect, we will repair or replace the product, or refund the purchase price, at our option.

We will return the repaired product or replacement at our expense unless it is determined by us that there is no defect, or that the defect resulted from causes not within the scope of our warranty in which case we will, at your direction, dispose of or return the product. In the event you choose to have the product returned, you will be responsible for the handling and shipping costs of the return.

### HOW STATE LAW APPLIES

This warranty gives you specific legal rights; you may also have other rights which vary from state to state.

### LIMITATIONS ON THIS WARRANTY

WALTER MEIER (MANUFACTURING) INC., LIMITS ALL IMPLIED WARRANTIES TO THE PERIOD OF THE LIMITED WARRANTY FOR EACH PRODUCT. EXCEPT AS STATED HEREIN, ANY IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS ARE EXCLUDED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG THE IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

WALTER MEIER SHALL IN NO EVENT BE LIABLE FOR DEATH, INJURIES TO PERSONS OR PROPERTY, OR FOR INCIDENTAL, CONTINGENT, SPECIAL, OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF OUR PRODUCTS. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

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# Warnings

1. Read and understand the entire owners manual before attempting assembly or operation.
2. Read and understand the warnings posted on the machine and in this manual. Failure to comply with all of these warnings may cause serious injury.
3. Replace the warning labels if they become obscured or removed.
4. This drill press is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a drill press, do not use until proper training and knowledge have been obtained.
5. Do not use this drill press for other than its intended use. If used for other purposes, Walter Meier (Manufacturing) Inc., disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.
6. Always wear approved safety glasses/face shields while using this drill press. Everyday eyeglasses only have impact resistant lenses; they are not safety glasses.
7. Before operating this drill press, remove tie, rings, watches and other jewelry, and roll sleeves up past the elbows. Remove all loose clothing and confine long hair. Non-slip footwear or anti-skid floor strips are recommended. Do **not** wear gloves.
8. Wear ear protectors (plugs or muffs) during extended periods of operation.
9. Some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
   - Lead from lead based paint.
   - Crystalline silica from bricks, cement and other masonry products.
   - Arsenic and chromium from chemically treated lumber.

   Your risk of exposure varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area and work with approved safety equipment, such as face or dust masks that are specifically designed to filter out microscopic particles.
10. Do not operate this machine while tired or under the influence of drugs, alcohol or any medication.
11. Make certain the switch is in the **OFF** position before connecting the machine to the power supply.
12. Make certain the machine is properly grounded.
13. Make all machine adjustments or maintenance with the machine unplugged from the power source.
14. Remove adjusting keys and wrenches. Form a habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.
15. Keep safety guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards immediately.
16. Check damaged parts. Before further use of the machine, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
17. Provide for adequate space surrounding work area and non-glare, overhead lighting.
18. Keep the floor around the machine clean and free of scrap material, oil and grease.
19. Keep visitors a safe distance from the work area. **Keep children away.**
20. Make your workshop child proof with padlocks, master switches or by removing starter keys.

# Warnings

21. Give your work undivided attention. Looking around, carrying on a conversation and “horse-play” are careless acts that can result in serious injury.
22. Maintain a balanced stance at all times so that you do not fall or lean against the drill bit or other moving parts. Do not overreach or use excessive force to perform any machine operation.
23. Use the right tool at the correct speed and feed rate. Do not force a tool or attachment to do a job for which it was not designed. The right tool will do the job better and safer.
24. Use recommended accessories; improper accessories may be hazardous.
25. Maintain tools with care. Keep bits sharp and clean for the best and safest performance. Follow instructions for lubricating the machine and changing accessories.
26. Whenever possible, use the fence. Also use jigs or fixtures where needed to secure the workpiece. A drill bit can seize up, causing the workpiece to rotate with the spindle and can cause injury.
27. Turn off the machine and disconnect from power before cleaning. Use a brush or compressed air to remove chips or debris — do not use your hands.
28. Do not stand on the machine. Serious injury could occur if the machine tips over.
29. Never leave the machine running unattended. Turn the power off and do not leave the machine until it comes to a complete stop.
30. Remove loose items and unnecessary work pieces from the area before starting the machine.

**Familiarize yourself with the following safety notices used in this manual:**

**⚠CAUTION** This means that if precautions are not heeded, it may result in minor injury and/or possible machine damage.

**⚠WARNING** This means that if precautions are not heeded, it may result in serious injury or possibly even death.

## - - SAVE THESE INSTRUCTIONS - -

# Introduction

This manual is provided by Walter Meier (Manufacturing) Inc., covering the safe operation and maintenance procedures for a Powermatic Model 2800 Drill Press. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. This machine has been designed and constructed to provide years of trouble free operation if used in accordance with instructions set forth in this manual. If there are any questions or comments, please contact either your local supplier or Walter Meier. Walter Meier can also be reached at our web site: www.wmhtoolgroup.com.

# Specifications

| | |
|---|---|
| Model Number | 2800 |
| Stock Number | 1792800 |
| Swing (in.) | 18 |
| Maximum Drilling Capacity (in.) | 5/8 |
| Chuck Size (in.) | 5/8 |
| Spindle Travel (in.) | 4-3/8 |
| Maximum Spindle to Table Distance (in.) | 26-1/2 |
| Maximum Spindle to Base Distance (in.) | 47 |
| Table Size (LxW)(in.) | 16 x 14 |
| Table Size Fully Extended (LxW)(in.) | 16 x 26 |
| Spindle Taper | MT2 x JT3 |
| Column Diameter (in.) | 3-1/8 |
| Range of Spindle Speed (RPM) | 400 to 3000 |
| Base Size (in.) | 11-7/8 x 19-5/8 |
| Motor | TEFC, 1HP, 115/230V (pre-wired 115V) |
| Overall Dimensions (HxWxD)(in.) | 68-1/2 x 20 x 31-1/2 |
| Approximate Net Weight (lbs.) | 209 |
| Approximate Shipping Weight (lbs.) | 230 |

The above specifications were current at the time this manual was published, but because of our policy of continuous improvement, Walter Meier reserves the right to change specifications at any time and without prior notice, without incurring obligations.

# Unpacking

Open shipping container and check for shipping damage. Report any damage immediately to your distributor and shipping agent. Do not discard any shipping material until the Drill Press is assembled and running properly.

Compare the contents of your container with the following parts list to make sure all parts are intact. Missing parts, if any, should be reported to your distributor. Read the instruction manual thoroughly for assembly, maintenance and safety instructions.

## Contents of the Shipping Container

1 Column Assembly with Rack and Ring
1 Head Assembly
1 Base
1 Table Bracket and Table

*The smaller accessories are shown in Figure 1:*

3 Downfeed Handles (A)
1 Chuck (B)
1 Drift Key (C)
1 Arbor (D)
1 Shift Knob (E)
1 Locking Handle (F)
2 Lock Knobs (G)
2 T-Nuts (G)
2 Flat Washers (G)
2 Socket Head Cap Screws, M6x12 (G)
2 Hex Nuts, M6 (G)
1 Worm (H)
1 Large Handle (I)
4 Hex Cap Screws, M10x40 (J)
3 Hex Wrenches, 3, 5 and 6mm (K)
1 Dust Port (L)
1 Fence Assembly (M)
1 Owner's Manual (not shown)
1 Warranty Card (not shown)

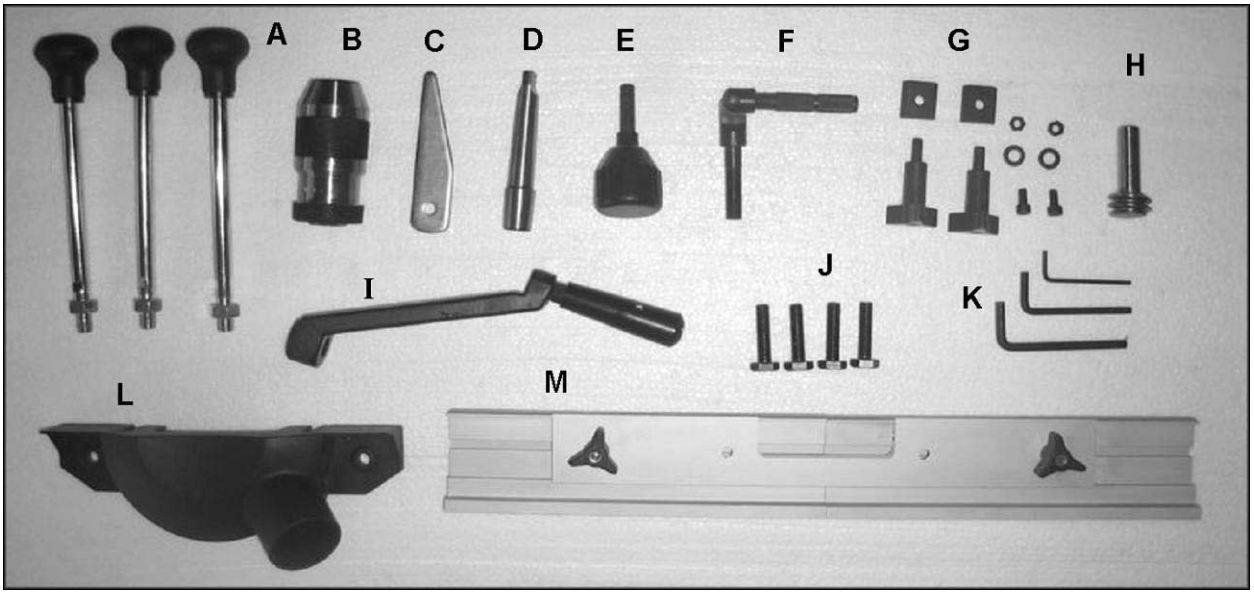



*Figure 1*

**⚠WARNING** **Read and understand the entire contents of this manual before attempting set-up or operation! Failure to comply may cause serious injury.**

# Assembly

***Tools required for assembly:***

Rubber mallet
17mm open-end ,or socket, wrench
Set of hex (Allen) wrenches

Exposed metal surfaces on the drill press have been factory-coated with a protectant. Remove this with a soft rag moistened with a light solvent. Do not use an abrasive pad and do not use gasoline, paint thinner or acetone, as these will damage plastic components and painted surfaces.

The drill press should be placed in a dry area with a level floor and good lighting. Provide enough space around the drill press to allow for operations and any adjustments or servicing.

**⚠CAUTION Assembly is a two person operation to avoid injury from accidental dropping.**

## Column

*Referring to Figure 2:*

1. Place the base (Figure 2) upon a level floor. It may be secured to the floor with lag screws (not provided) through the four holes in the base.
2. If you do not wish to permanently secure the drill press to the floor, it can be bolted to a plywood panel which will serve as its base and further stabilize it. Use a high grade of plywood at least 3/4" thick. It should be large enough to prevent vibration, sliding or moving of the drill press during operation. Do not use a mobile base with this machine.
3. Attach the column assembly to the base with four M10x40 hex cap screws, and tighten with a 17mm wrench.

## Table Bracket

When shipped, the ring and rack are bundled together with the column in plastic wrap.

*Referring to Figures 3 through 6:*

1. Remove the wrap and take the ring from the column by loosening the set screw and sliding the ring off. Also remove the rack. See Figure 4.
2. Position the worm through the hole in the table bracket (Figure 3) and push it as far as it will go until the shaft protrudes and the worm is meshed with the gear, as shown.

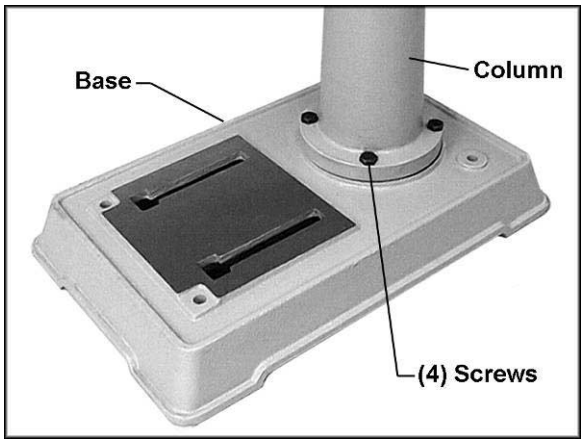



*Figure 2*

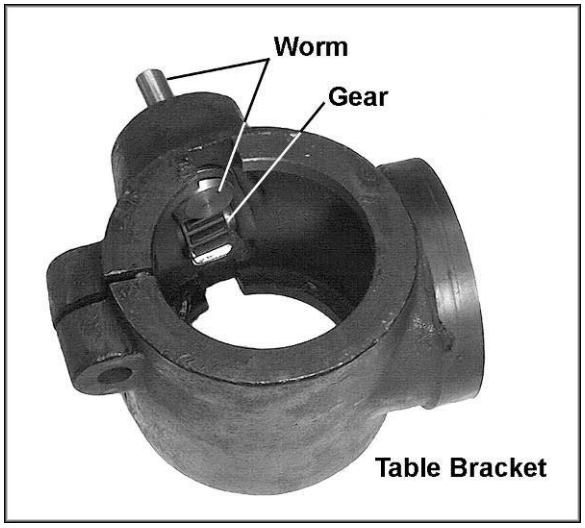



*Figure 3*
*(table shown removed)*

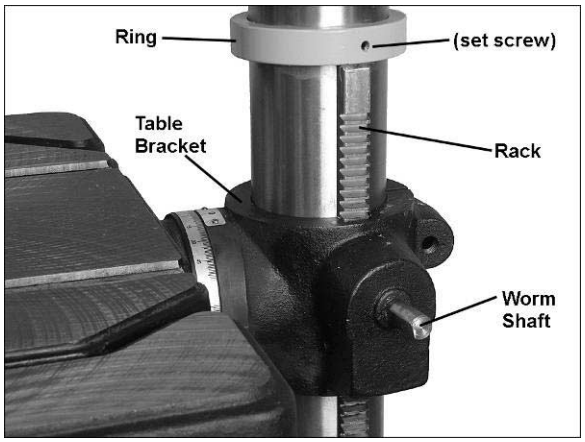



*Figure 4*

NOTE: The table can be removed if desired to make handling the bracket easier, through this is not necessary for installation. To remove the table, loosen and remove the bolt holding table to bracket.

3. Position the rack into the slot in the table bracket, meshing the rack teeth with the worm gear.
4. Hold the rack in the slot, while setting the table bracket over the column. Then slide table bracket and rack together down the column.
5. The lower end of the rack should rest in the lip of the holder, as shown in Figure 6.
6. Slide the large handle onto the protruding shaft of the worm (Figure 5), and tighten the set screw in the handle with a 3mm hex wrench. Crank the handle counterclockwise to lower the table bracket down the column.
7. Place the ring onto the column and slide it down over the top edge of the rack (see Figure 4). Tighten the set screw on the ring.
8. Screw the locking handle into the table bracket (Figure 5) and tighten the locking handle to secure the table bracket's position on the column.

## Head Assembly

*Referring to Figures 7 and 8:*

1. With the help of an assistant, mount the head assembly to the column, and tighten the two set screws with a 5mm hex wrench. See Figure 7.
2. Screw the three downfeed handles into the threaded holes in the hub. These can be mounted to either side of the head for your convenience. Tighten the hex nuts against the hub.
3. Insert the shift knob into the collar on the side by screwing it in clockwise (Figure 8).

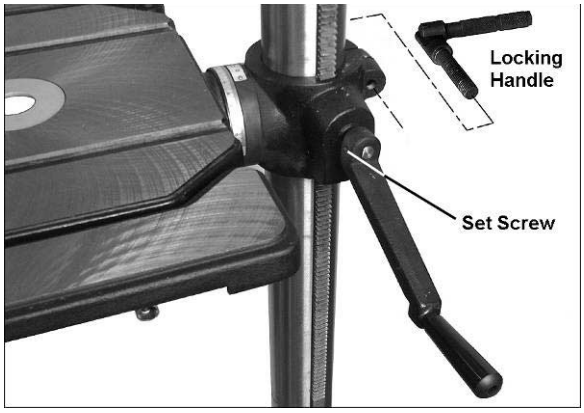



*Figure 5*

*Figure 6*

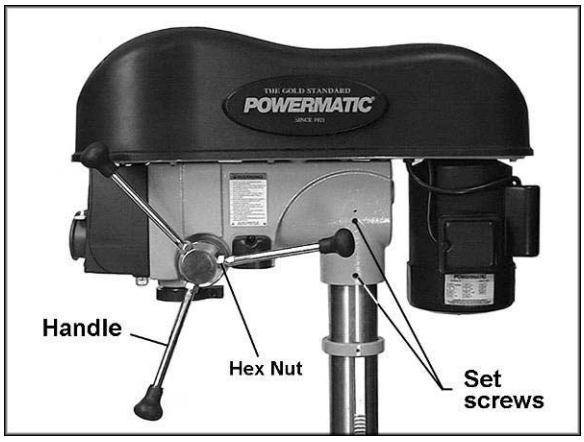



*Figure 7*

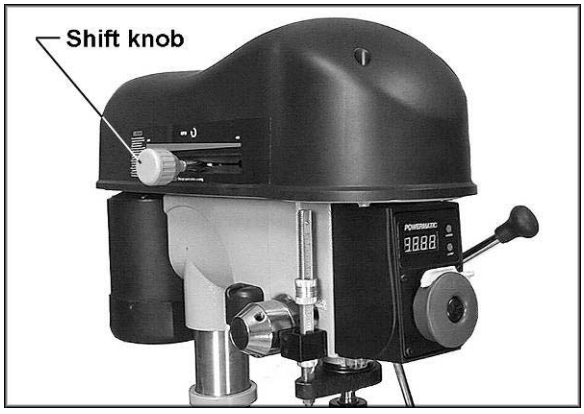



*Figure 8*

## Installing the Fence

*Referring to Figure 9:*

Slide the fence assembly into the T-slots on the table. The fence assembly is secured by tightening the knobs (A. The fence can be expanded by loosening the smaller knobs (B) and sliding the fence halves outward. Tighten all four knobs on the fence assembly before operating the drill press.

A dust chute (2" diameter) is mounted to the fence assembly for attaching a dust collection system. The fence halves must be in the expanded position to provide an opening for dust exhaust.

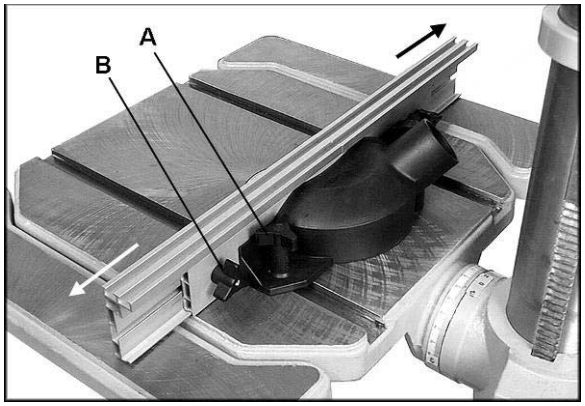



*Figure 9*

## Installing Arbor and Chuck

*Referring to Figure 10:*

1. Disconnect machine from power source.
2. Thoroughly clean the entire arbor and the inside of the chuck (Figure 10) with a soft rag and solvent such as mineral spirits. Any grease or residue in these areas can cause the pieces to separate and create a safety hazard as well as damage to the tool.
3. Slide arbor up into the spindle.
4. Firmly push the chuck by hand onto the taper of the arbor.
5. Make sure the jaws of the chuck are opened all the way until they are inside the chuck body. Use a single tap from a rubber mallet, or a hammer and a block of wood, against the bottom of the chuck to seat the chuck securely onto the arbor.

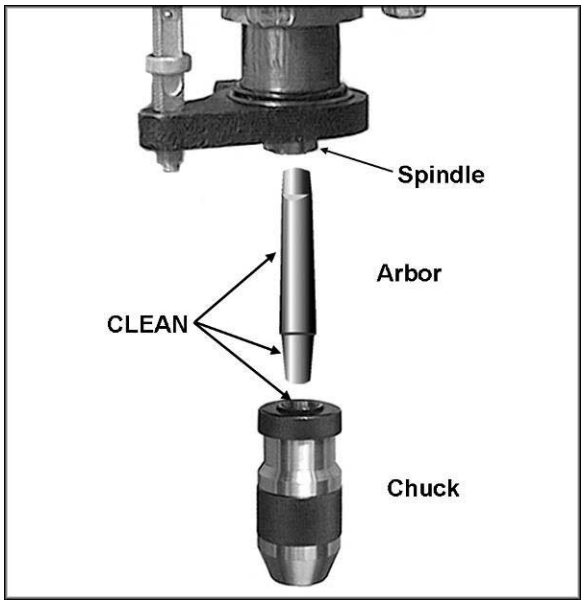



*Figure 10*

**⚠CAUTION Do not use a steel hammer directly against the chuck, as this may damage the chuck.**

## Chuck and Arbor Removal

*Referring to Figure 11:*

1. Disconnect machine from power source.
2. Lower the quill assembly with the downfeed handles to expose the slot.
3. Insert the drift key into the slot.
4. Tap the drift key into the slot until the chuck and arbor fall out. **NOTE:** Hold onto the chuck to prevent it being damaged as it falls.

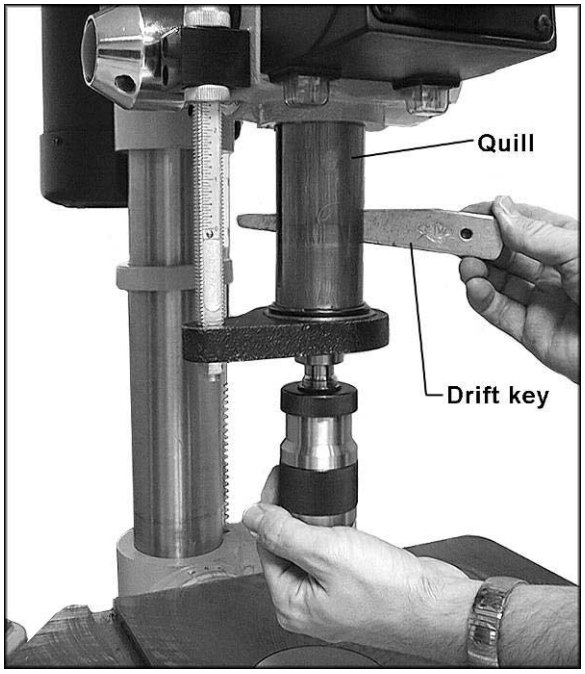



*Figure 11*

# Grounding Instructions

**⚠WARNING Electrical connections must be made by a qualified electrician in compliance with all relevant codes. This machine must be properly grounded to help prevent electrical shock and possible fatal injury.**

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This machine is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding connector.

If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the machine's plug.

It is recommended that the PM2800 Drill Press be connected to a grounded, *minimum* 20 amp circuit with a *minimum* 20 amp circuit breaker or time delay fuse. **Local codes take precedence over recommendations.**

Repair or replace damaged or worn cord immediately.

### 115 Volt Operation

As received from the factory, your drill press is ready to operate at 115-volt operation. This drill press, when wired for 115 volt, is intended for use on a circuit that has an outlet that looks like the one illustrated in Figure 12. The tool has a grounding plug that looks like the plug illustrated in Figure 12.

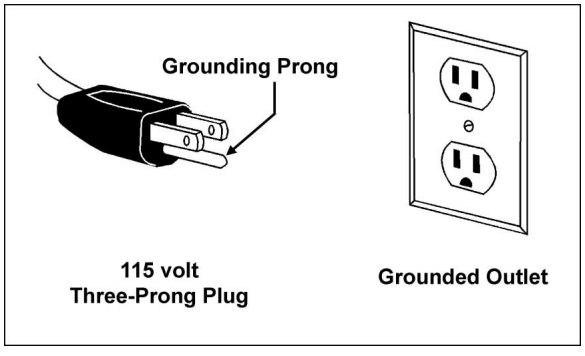



*Figure 12*

A temporary adapter, similar to the one in Figure 13, may be used to connect this plug to a 2-pole receptacle if a properly grounded outlet is not available. The temporary adapter should only be used until a properly grounded outlet can be installed by a qualified electrician. **This adapter is not applicable in Canada.**

The green-colored rigid ear, lug, and the like, extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box.

**230 Volt Operation**

If 230V, single phase operation is desired, the following instructions must be performed:

1. Disconnect the machine from the power source.
2. The drill press motor has four leads that are factory connected for 115V operation. For 230V operation, re-connect the leads as shown in the diagrams on pages 25 and 26.
3. The 115V attachment plug supplied with the drill press must be replaced with a UL/CSA listed plug suitable for 230V operation, similar to the plug illustrated in Figure 14. Contact your local Authorized Powermatic Service Center or qualified electrician for proper procedures to install the plug.
4. The drill press must comply with all local and national codes after the 230 volt plug is installed.
5. The drill press with a 230-volt plug should only be connected to an outlet having the same configuration as shown in Figure 14. No adapter is available or should be used with the 230-volt plug.

## Extension Cords

If an extension cord is necessary, make sure the cord rating is suitable for the amperage listed on the machine's motor plate. An undersize cord will cause a drop in line voltage resulting in loss of power and overheating.

The chart in Figure 15 shows the correct size cord to use based on cord length and motor plate amp rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

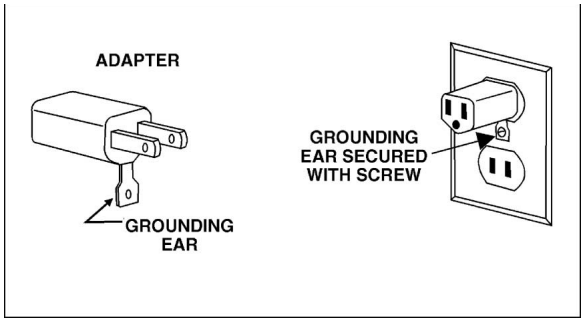



*Figure 13*

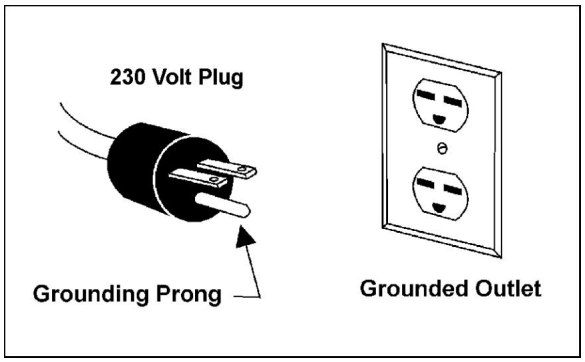



*Figure 14*

**Recommended Gauges (AWG) of Extension Cords**

| Amps | Extension Cord Length * | | | | | |
|---|---|---|---|---|---|---|
| | 25 feet | 50 feet | 75 feet | 100 feet | 150 feet | 200 feet |
| < 5 | 16 | 16 | 16 | 14 | 12 | 12 |
| 5 to 8 | 16 | 16 | 14 | 12 | 10 | NR |
| 8 to 12 | 14 | 14 | 12 | 10 | NR | NR |
| 12 to 15 | 12 | 12 | 10 | 10 | NR | NR |
| 15 to 20 | 10 | 10 | 10 | NR | NR | NR |
| 21 to 30 | 10 | NR | NR | NR | NR | NR |

*based on limiting the line voltage drop to 5V at 150% of the rated amperes.
*NR: Not Recommended.*

*Figure 15*

# Adjustments

## Table Movement

**To raise or lower the table:**

Loosen the column locking handle (shown in Figure 5). Turn large handle to raise or lower the table along the column rack. Re-tighten the column locking handle before attempting to drill.

**To swing table around the column:**

When drilling into a long workpiece, swing the table out of the way and use the drill press base as your table. Slots in the base can be used to mount work holding devices.

1. Loosen the column locking handle (shown in Figure 5).
2. Swing table to desired position. If the rack tends to bind, you will need to nudge the top or bottom end of the rack around the column while swinging the table.
3. Tighten the column locking handle.

**To tilt table:**

*Referring to Figures 16 and 17:*

1. To tilt the table, loosen the bolt (A) slightly and pull out on the indicator pin (B). The indicator pin will engage at 0, 45 and 90 degree positions of the table.
2. Pivot the table to desired angle by aligning the scale (in degrees) on the table to the line on the table bracket (Figure 17).
3. Re-tighten bolt (A, Figure 16).

**Table Extensions**

Loosen the handles (C, Figure 16) and slide the extensions outward, then re-tighten the handles.

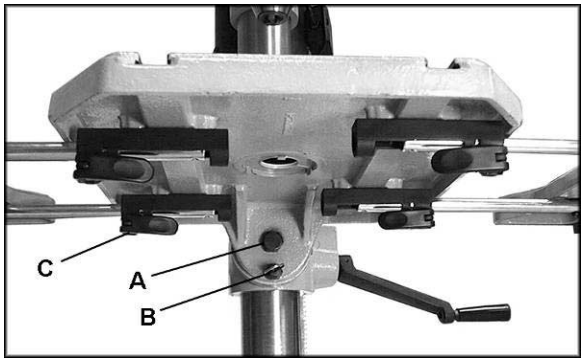



*Figure 16*

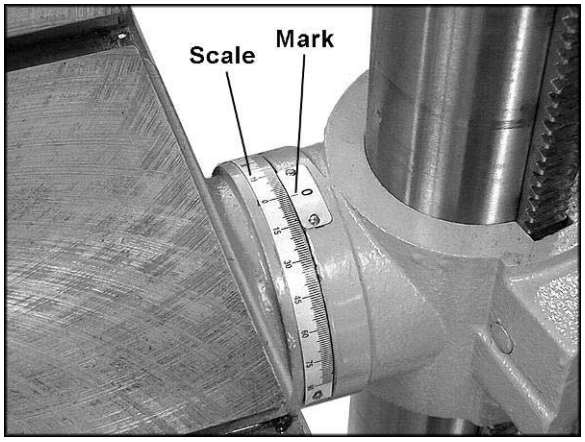



*Figure 17*

## Changing Spindle Speeds

**⚠CAUTION Change speeds only while the drill press is running.**

With the drill press running, rotate the shift knob (Figure 18) slightly counterclockwise to loosen it, then push the handle left or right until the desired speed is displayed on the LED readout at the front of the head. Tighten the shift knob clockwise to secure the setting.

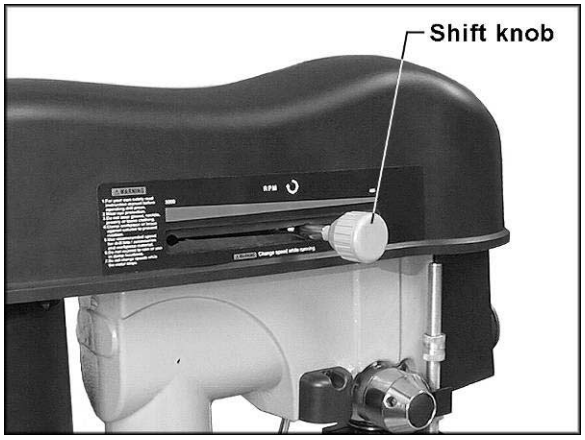



*Figure 18*

## Depth Stop

The depth stop is useful for repetitive drilling of holes of the same depth.

*Referring to Figure 19:*

1. Measure the distance from the tip of the drill bit to the workpiece. Add to this the desired depth of the hole in the workpiece.
2. Rotate the bottom nut (A, Figure 19) to this measurement on the accompanying scale.
3. Bring the top nut (B, Figure 19) flush with the bottom nut. This will prevent any movement of the bottom nut as it contacts the seat (C, Figure 19).

Alternatively, for less precise drilling, you can lower the bit to the desired depth, as shown in Figure 19, and tighten both nuts (A and B) against the seat (C).

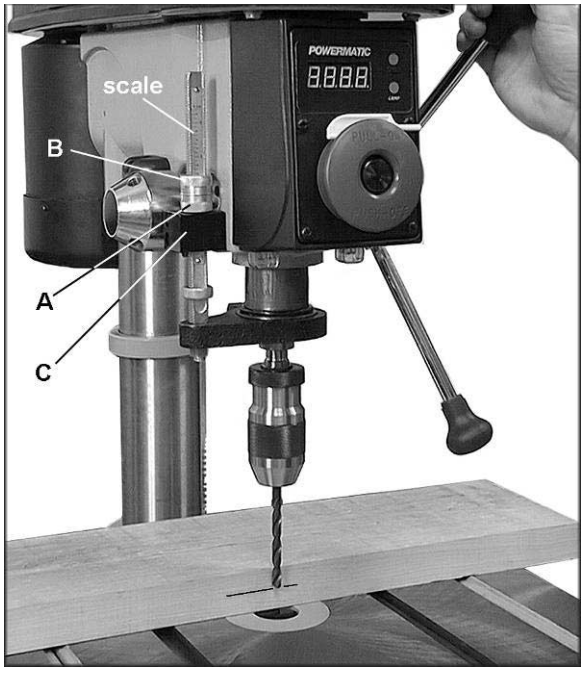



*Figure 19*

## Return Spring

The tension of the return spring (which raises the spindle after drilling) has been pre-set at the factory. No further adjustment should be attempted unless absolutely necessary. Should it become necessary, proceed as follows.

*Referring to Figure 20:*

1. Disconnect machine from power source.
2. Pry off the cap (A, Figure 20) and remove the hex nut and two washers (B). Pull off the hub (C).
3. Loosen the two inner hex nuts (D) *Do not remove.*
4. Pull out slightly the coil spring cover (E) while firmly holding it. **DO NOT allow the coil spring cover to turn freely in your hand, or the spring will unwind.**
5. Rotate the coil spring cover until the tab (F) on the spring retainer engages the next notch in the coil spring cover. Rotate the coil spring cover counterclockwise to increase spring tension, clockwise to decrease.
6. Make sure the coil spring cover is pushed back in, then tighten the two hex nuts (D). Do not over tighten. The hex nuts should be tightened against each other.
7. Re-install hub, washers, hex nut and cap.

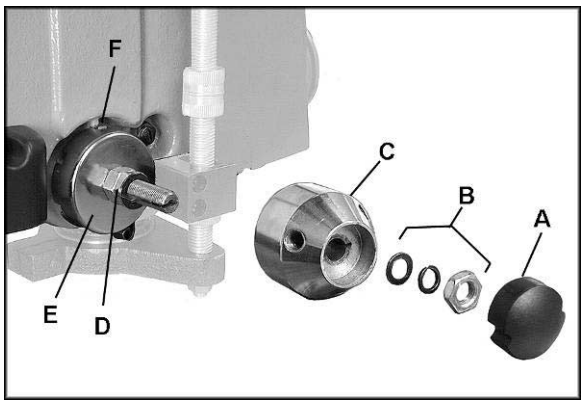



*Figure 20*

## Start/Stop

**Power Indicator Light** – The *start switch* has a power indicator lamp which is *on* ***whenever there is power connected*** to the Drill Press, not just when the Drill Press is running.

*Do not assume that no light means there is no power to the machine.* If the bulb is bad, there will be no indication. Always check before use.

**⚠WARNING Do not rely that no light means no power to the machine. Always check for power first. Failure to comply may cause serious injury!**

*Referring to Figure 21:*

**Start** – Press the green start switch.

When power is connected to the machine, the green light is always on regardless of whether the Drill Press is running or not.

**Stop** – Press the red switch to stop.

**Reset** – In the event that the Drill Press stops without pressing the stop button, as the result of a tripped fuse or circuit breaker, etc.:

1. Press red button to reset main switch.
2. Press the green button to restart the machine.

**Safety** - The switch has a safety feature that prevents unauthorized or accidental starting of the drill press. With the switch in the "off" position, slide out the switch safety key (Figure 21). This piece must be re-inserted before the drill press can operate.

## Laser Adjustment

*(Figures 22 through 25)*

**⚠WARNING Do not look directly into the laser beam or view it directly with optical instruments. See Figure 22.**

The Laser Assembly has been installed and pre-set at the factory. It should, however, be checked and any adjustments made before operating the drill press. It should also be re-checked periodically, as constant machine vibration may cause it to become misaligned.

1. Remove the *guards* (item 184, page 20) to access the laser assemblies.
2. Take a length of *board* (Q) and draw a perpendicular line (N) on one side using a square.
3. Place a small *drill bit* (K) in the *chuck* (L), then place the board (Q) on the table on edge against the drill bit with the marked-line side toward the back of the drill press.

   **Important**: The table should be in horizontal position and locked. *Verify that the line* (N, Figure 24) *is perpendicular to the table.*

*Figure 21*

*Figure 22*

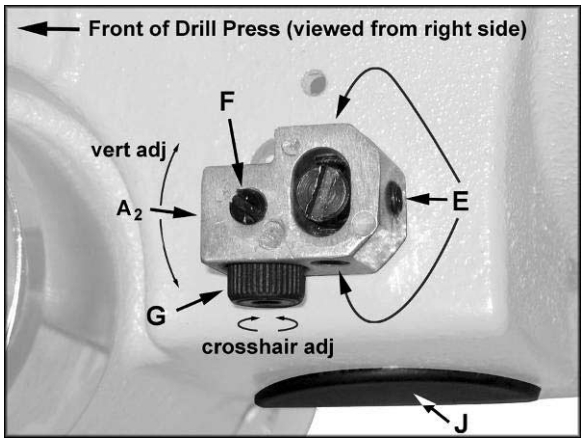



*Figure 23*

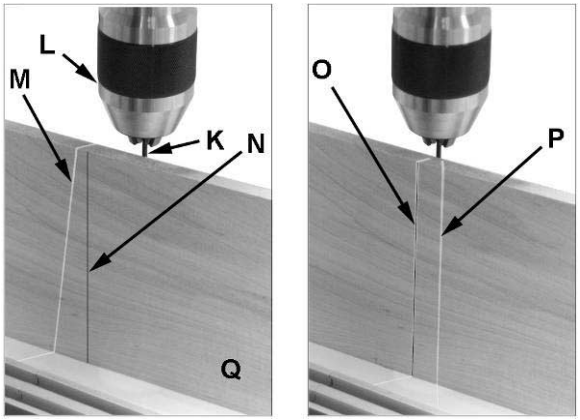



*Figure 24*

4. Connect power to the drill press, and turn on the laser using the button at the front of the drill press head.

*Vertical Alignment*

5. Manually rotate the laser assembly ($A_2$) and move the board from side to side as required until the laser light (M) lines up with the board marking (N) to look like (O). Then carefully tighten the three setscrews (E).

   Repeat step 5, if necessary, until the light and marking are aligned.

*6.* Adjust the other laser in the same manner. Two parallel laser markings should look like O and P in Figure 24 – the distance between the lines will vary with board thickness; however, the lines must be parallel.

*Cross Hair Alignment*

7. Place *board* (R) flat on the table. Do not allow the board to move from this position; use clamps if needed. Bring the bit down until it *leaves a slight perforation* in the board; then raise it back up.

8. Loosen one laser *setscrew* (F, Fig. 23) and adjust (G, Fig. 23) so the laser line crosses the perforation (S). Tighten setscrew (F).

9. Adjust the other laser assembly in the same manner *until the laser lines form cross hairs* (S) exactly over the perforation in the board.

10. Tighten setscrew (F, Fig, 23). Re-check the vertical alignment to insure that the laser lines did not shift during the tightening process.

    The laser is now calibrated properly and the location of your holes can be centered at the cross hairs for accurate drilling.

11. Assemble *guards* with pan head screws over the laser on each side.

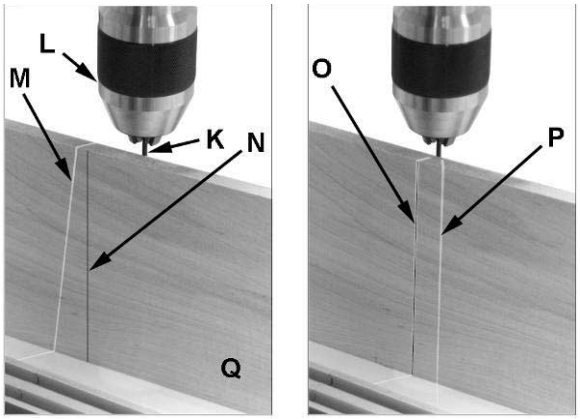



*Figure 24 (repeated)*

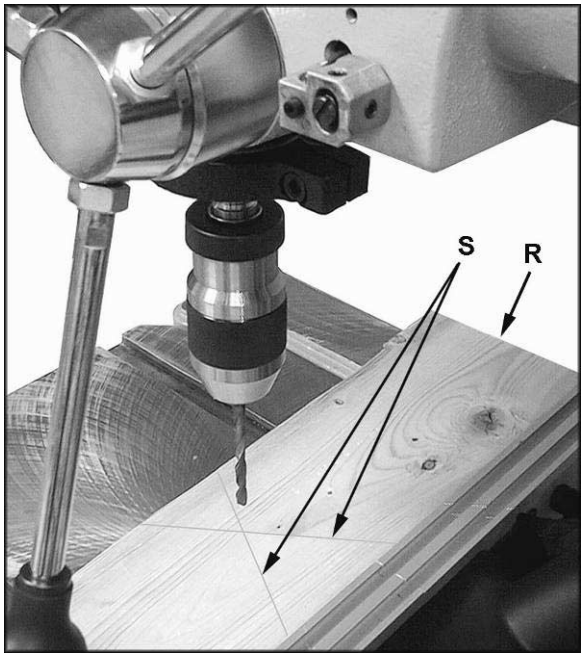



*Figure 25*

# Operation

## Installing the Bit

Insert the bit (not provided) into the chuck jaws with about 1" insertion. When using a small bit, do not insert it so far that the jaws touch the flutes of the bit. Make sure the bit is centered in the chuck before tightening the chuck. The chuck is a keyless model; simply rotate it by hand to tighten the bit.

## Positioning the Workpiece

**⚠WARNING Whenever possible, use clamps or work hold-downs to secure the workpiece to the table.**

Always secure the workpiece to prevent it being torn from the operator's hand. Using the column as a work stop is not recommended; instead, use holding devices such as clamps. When using the table in tilted position, make sure the table is securely tightened and the workpiece is clamped sufficiently.

For clean, splinter-free holes, place a piece of scrap wood on the table below the workpiece.

Perform operations with a minimum extension of the quill. Adjust table position rather than using excessive quill travel.

Feed the bit into the material with only enough force to allow the bit to work. Feeding too slowly may cause burning of the workpiece. Feeding too quickly may cause the motor to stop and/or the bit to break.

## General Inspection

Before each operation of your Model 2800 drill press, make a habit of checking that all locking handles, set screws, bolts, etc., are tight on the table and head. Confirm that the drill bit is securely inserted inside the chuck jaws.

Clear all items, such as tools and rags, away from the machine.

Before attempting regular work, get the feel of the drill press by practicing on scrap material. For best results, always use sharp bits and proper feed rates.

## Setting Rotation Speed

There are several factors which determine the best speed to use in any drill press operation, such as kind of material being worked, size of hole, type of drill, and quality of cut desired.

A general rule of thumb is, the smaller the drill, the greater the required RPMs. And the speed should be faster for soft materials and slower for harder materials.

# Maintenance

**⚠WARNING Before doing maintenance on the machine, disconnect it from the electrical supply by pulling out the plug or switching off the main switch! Failure to comply may cause serious injury.**

After each use, clean sawdust from the table with a brush (do not use your hands).

Occasionally apply a light film of oil to the quill and column. This will reduce wear, prevent rust and assure ease of operation.

Apply grease to the rack on the column.

Check that bolts are tight and electrical cords are in good condition. Belts should be in good condition and tensioned properly. Occasional dressing of the belts with spray can type belt dressing or paraffin wax will promote longer belt life and quieter operation.

Bearings on the drill press are self-contained and permanently lubricated; no further lubrication is needed.

Exposed metal surfaces of the table and base should be kept clean and free of rust. Apply a good quality paste wax. Avoid any wax that contains silicone or other synthetic ingredients. These materials can find their way into lumber and can make staining and finishing difficult.

The quill return spring should receive SAE 20 oil once yearly. Apply the oil beneath the coil spring cover (E, Figure 20) using a squirt can.

# Troubleshooting

| Trouble | Probable Cause | Remedy |
|---|---|---|
| Drill press will not start. | Not connected to power. | Check all plug connections. |
| | Fuse blown, or circuit breaker tripped. | Replace fuse, or reset circuit breaker. |
| | Cord damaged. | Replace cord. |
| Drill press does not come up to speed. | Extension cord too light or too long. | Replace with adequate size and length cord. |
| | Low current. | Contact a qualified electrician. |
| Excessive vibration. | Improper belt tension. | Adjust belt tension. |
| | Uneven belt wear (hard spots). | Replace belt. |
| | Motor or spindle pulley out of balance. | Balance or repair problem pulley. |
| | Motor malfunction. | Have motor tested by a qualified service center. Repair or replace as necessary. |
| Motor stalls. | Overfeeding the bit. | Reduce feed rate. |
| | Dull bit. | Sharpen or replace bit. |
| | Motor not reaching running speed. | Repair or replace motor. |
| | Motor is malfunctioning. | Have motor tested by a qualified service center. Repair or replace as necessary. |
| ;Noisy Operation.<br><br>Noisy Operation (cont.) | Excessive vibration. | See “Excessive Vibration” above. |
| | Incorrect belt tension. | Adjust belt tension. |
| | Dry spindle. | Lubricate spindle. |
| | Loose pulleys. | Make any needed corrections. |
| | Noisy motor. | Check motor bearings or for loose motor fan. |
| Wood splinters on the underside. | No backing board used. | Place a scrap board beneath the workpiece to prevent splintering. |
| Drill or tool heats up or burns workpiece. | Excessive speed. | Reduce speed. |
| | Chips not clearing from hole or bit. | Retract drill bit frequently to remove chips. |
| | Dull drill bit. | Resharpen, or replace drill bit. |
| | Feeding the bit too slowly. | Increase feed rate. |
| | Rotation of bit incorrect. | Reverse motor rotation (refer to diagrams on pages 25 and 26). |
| Drill bit wanders. | Bit sharpened incorrectly. | Resharpen bit correctly. |
| | Bent drill bit. | Replace bit. |

| Trouble | Probable Cause | Remedy |
|---|---|---|
| | Bit or chuck not installed properly. | Reinstall the chuck, or bit properly. |
| Drill bit binds in workpiece. | Workpiece pinching the bit. | Support or clamp workpiece. |
| | Excessive feed rate. | Decrease feed rate. |
| | Chuck jaws not tight. | Tighten chuck jaws. |
| | Improper belt tension. | Adjust belt tension. |

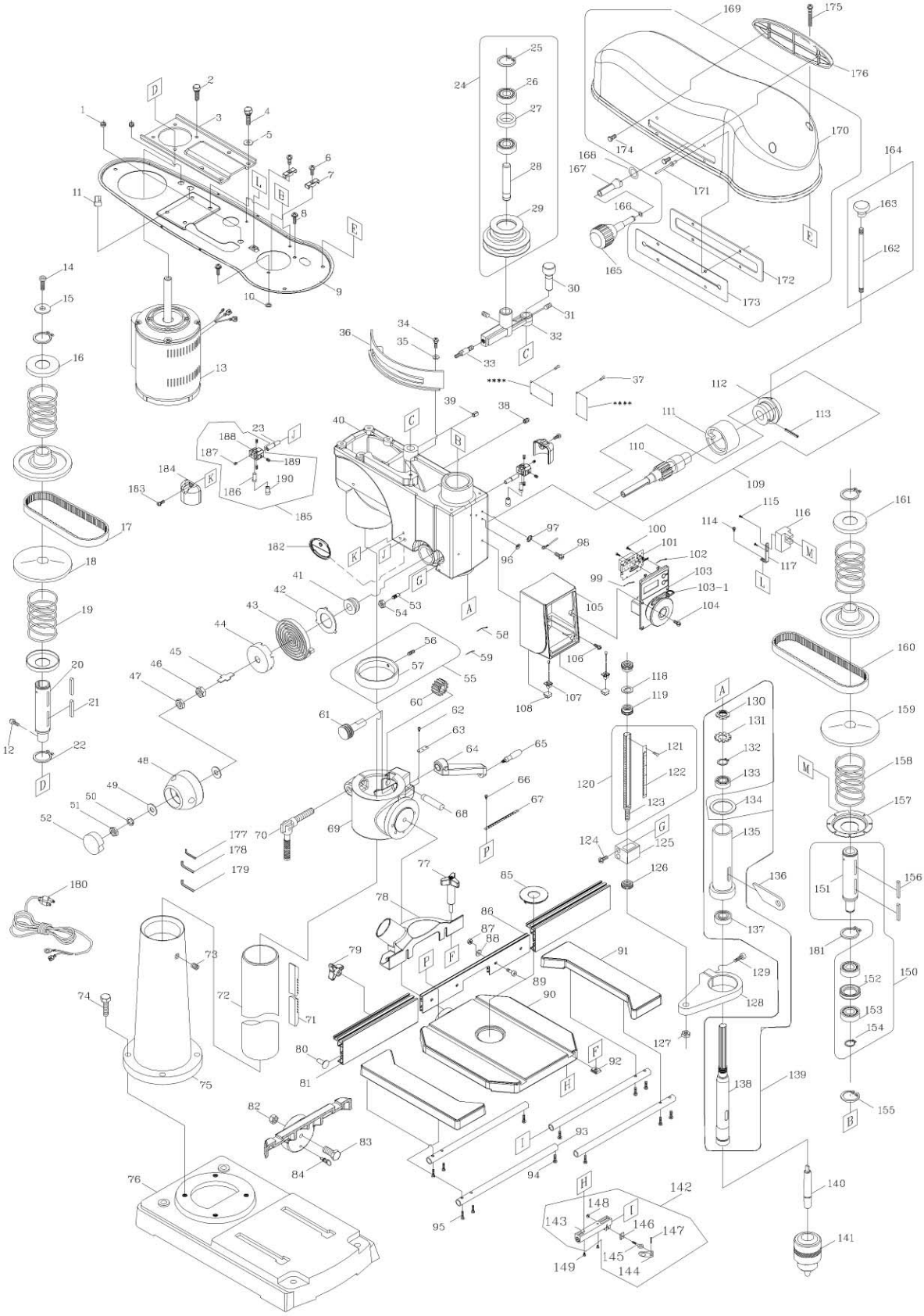
# Optional Accessories

JW1000 Reducer, 4" to 2-1/4" O.D. – 2"I.D.

# Replacement Parts

Replacement parts are listed on the following pages. To order parts or reach our service department, call 1-800-274-6848 Monday through Friday (see our website for business hours, www.powermatic.com). Having the Model Number and Serial Number of your machine available when you call will allow us to serve you quickly and accurately.

## Model 2800 Drill Press



## Parts List: Model 2800 Drill Press

| Index No. | Part No. | Description | Size | Qty |
|---|---|---|---|---|
| 1 | PM2800-001 | Strain Relief | | 2 |
| 2 | TS-1482051 | Hex Cap Screw | M6x25 | 4 |
| 3 | PM2800-003 | Retaining Plate | | 1 |
| 4 | TS-1490031 | Hex Cap Screw | M8x20 | 4 |
| 5 | TS-1550061 | Flat Washer | M8 | 4 |
| 6 | TS-1533052 | Pan Head Screw | M5x16 | 2 |
| 7 | PM2800-007 | Cord Clamp | | 2 |
| 8 | TS-1534052 | Phillips Pan Head Machine Screw | M6x16 | 2 |
| 9 | PM2800-009 | Lower Pulley Cover | | 1 |
| 10 | TS-0680021 | Flat Washer | 1/4” | 4 |
| 11 | PM2800-011 | Strain Relief | | 1 |
| 12 | TS-1503041 | Socket Head Cap Screw | M6x16 | 1 |
| 13 | PM2800-013 | Motor | 1HP,115/230V,1Ph | 1 |
| | PM2800-013MF | Motor Fan (not shown) | | 1 |
| | PM2800-013MFC-2 | Motor Fan Cover (not shown) | | 1 |
| | PM2800-013SC | Starting Capacitor (not shown) | 400uF, 125VAC | 1 |
| | PM2800-013CS | Centrifugal Switch (not shown) | | 1 |
| 14 | TS-1503031 | Socket Head Cap Screw | M6x12 | 1 |
| 15 | TS-0680021 | Flat Washer | 1/4” | 1 |
| 16 | PM2800-016 | Spring Cap | | 1 |
| 17 | PM2800-017 | Variable Speed Belt | 17x8x776 mm | 1 |
| 18 | PM2800-018 | Pulley | | 2 |
| 19 | PM2800-019 | Compression Spring | | 2 |
| 20 | PM2800-020 | Shaft Sleeve | | 1 |
| 21 | PM2800-021 | Key | 5x5x35 mm | 2 |
| 22 | PM2800-022 | C-Ring | A-30 | 2 |
| 23 | PM2800-023 | Set Bolt | | 2 |
| 24 | PM2800-024 | Center Pulley Assembly | | 1 |
| 25 | PM2800-025 | C-Ring | B-35 | 1 |
| 26 | BB-6202ZZ | Ball Bearing | 6202ZZ | 2 |
| 27 | PM2800-027 | Collar | | 1 |
| 28 | PM2800-028 | Center Shaft | | 1 |
| 29 | PM2800-029 | Center Pulley | | 1 |
| 30 | PM2800-030 | Post | | 1 |
| 31 | TS-1524011 | Set Screw | M8x8 | 2 |
| 32 | PM2800-032 | Speed Bar Seat | | 1 |
| 33 | PM2800-033 | Stud | | 1 |
| 34 | TS-1534052 | Pan Head Screw | M6x16 | 1 |
| 35 | PM2800-035 | Washer | | 1 |
| 36 | PM2800-036 | Guide | | 1 |
| 37 | PM2800-037 | Drive Screw | Ø2.3-5 mm | 8 |
| 38 | TS-1525021 | Socket Set Screw | M10x12 | 2 |
| 39 | PM2800-039 | Spring Pin | M6x25 | 2 |
| 40 | PM2800-040 | Head | | 1 |
| 41 | PM2800-041 | Shaft Seat | | 1 |
| 42 | PM2800-042 | Spring Retainer | | 1 |
| 43 | PM2800-043 | Coil Spring | | 1 |
| 44 | PM2800-044 | Spring Cap | | 1 |
| | PM2800-044A | Coil Spring Assembly (includes index # 43 and 44) | | 1 |
| 45 | PM2800-045 | Cushion | 30×21-2 mm | 1 |
| 46 | TS-0561052 | Hex Nut | 1/2”-20UNF | 1 |
| 47 | TS-0571052 | Hex Jam Nut | 1/2”-20UNF | 1 |
| 48 | PM2800-048 | Hub | | 1 |
| 49 | TS-2360121 | Flat Washer | M12 | 2 |
| 50 | TS-0720111 | Lock Washer | 1/2” | 1 |
| 51 | TS-0561052 | Hex Nut | 1/2”-20UNF | 1 |
| 52 | PM2800-052 | Cover | | 1 |

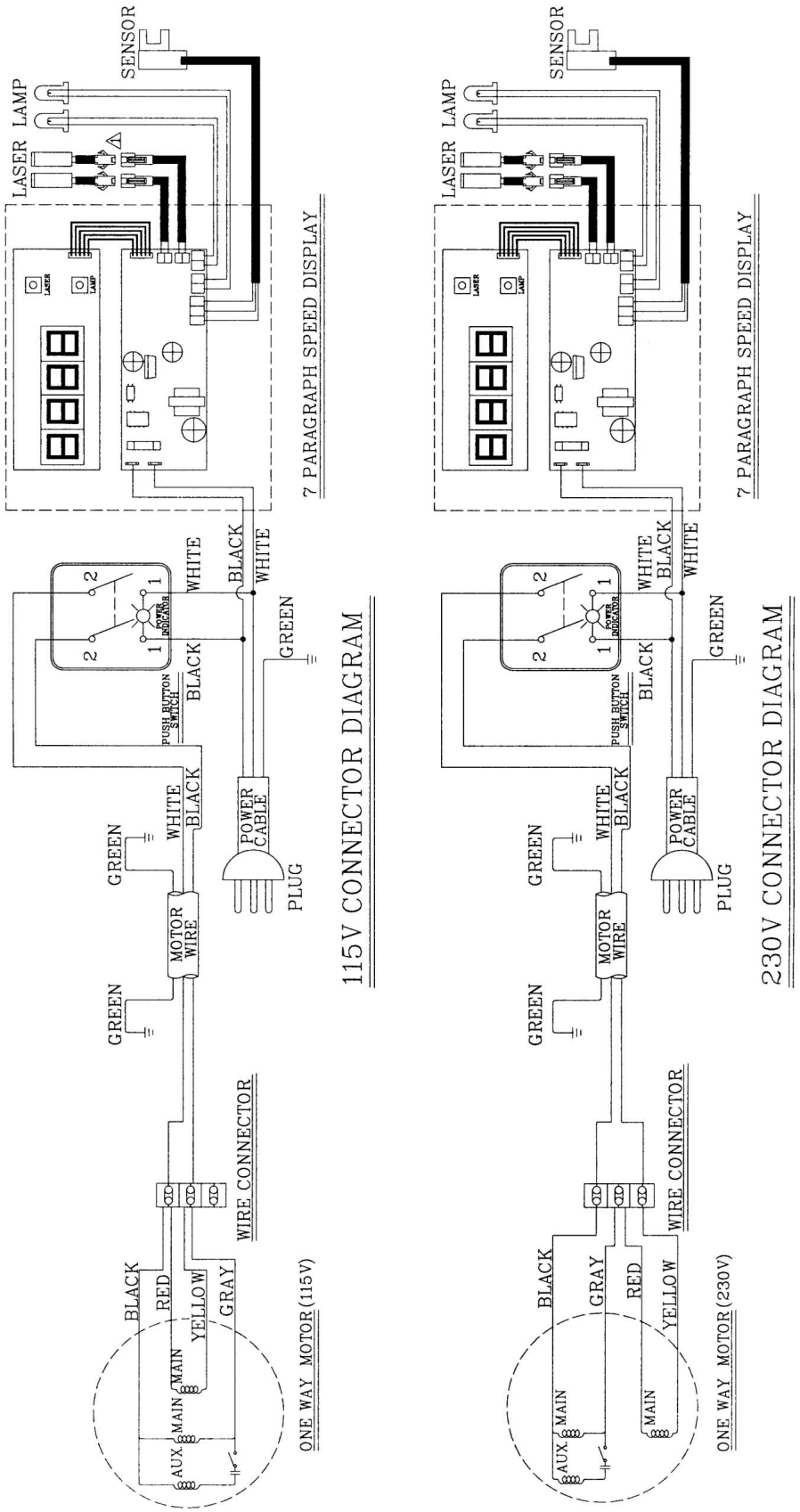
| | | | | |
|---|---|---|---|---|
| 53 | PM2800-053 | Quill Set Screw | M10x1.5-2A | 1 |
| 54 | TS-1540071 | Hex Nut | M10 | 1 |
| 55 | PM2800-055 | Rack Ring Assembly | | 1 |
| 56 | TS-1523021 | Socket Head Set Screw | M6x8 | 1 |
| 57 | PM2800-057 | Rack Ring | | 1 |
| 58 | PM2800-058 | Lead Wire Assembly | 26AWG*2C-550MM | 2 |
| 59 | PM2800-059 | Locking Cable Tie | A-085S | 1 |
| 60 | PM2800-060 | Gear | | 1 |
| 61 | PM2800-061 | Worm | | 1 |
| 62 | PM2800-037 | Drive Screw | Ø2.3-5 mm | 2 |
| 63 | PM2800-063 | Centering Scale | | 1 |
| 64 | PM2800-064 | Crank Arm | | 1 |
| 65 | PM2800-065 | Crank Arm Handle | M10 | 1 |
| 66 | PM2800-037 | Drive Screw | Ø2.3-5 mm | 2 |
| 67 | PM2800-067 | Tilt Angle Scale | | 1 |
| 68 | PM2800-068 | Gear Shaft | | 1 |
| 69 | PM2800-069A | Table Bracket | | 1 |
| 70 | PM2800-070 | Column Lock Handle | M12x35 | 1 |
| 71 | PM2800-071 | Rack | 108T | 1 |
| 72 | PM2800-072 | Column | | 1 |
| 73 | TS-1525021 | Set Screw | M10x12 | 1 |
| 74 | TS-1491061 | Hex Cap Screw | M10x40 | 4 |
| 75 | PM2800-075 | Column Holder | | 1 |
| 76 | PM2800-076 | Base | | 1 |
| 77 | PM2800-077 | Locking Knob | | 2 |
| 78 | PM2800-078 | Dust Port | | 1 |
| 79 | PM2800-079 | Knob | | 2 |
| 80 | PM2800-080 | Carriage Bolt | M6x20 | 2 |
| 81 | PM2800-081 | Fence | | 2 |
| 82 | PM2800-082 | Nut | 5/8”-11 | 1 |
| 83 | PM2800-083 | Hex Bolt | 5/8”-11x2-3/8” | 1 |
| 84 | PM2800-084 | Alignment Bolt Assembly | | 1 |
| 85 | PM2800-085 | Table Insert | | 1 |
| 86 | PM2800-086 | Fence Body | | 1 |
| 87 | TS-1540041 | Hex Nut | M6 | 2 |
| 88 | PM2800-088 | Washer | 8x15-1 mm | 2 |
| 89 | TS-1503031 | Socket Head Cap Screw | M6x12 | 2 |
| | PM2800-TBA* | Table and Bracket Assembly *[only serial # 7040000 and previous]* (includes index # 60, 62, 63, 68, 69, 82, 83, 84, 90 and 91) | | 1 |
| 90 | PM2800-090A | Table | | 1 |
| 91 | PM2800-091A | Table Extension Wing | | 2 |
| 92 | PM2800-092 | T-Nut | | 2 |
| 93 | PM2800-093 | Slide Tube | | 4 |
| 94 | PM2800-094 | Pan Head Tapping Screw | M5x10 | 4 |
| 95 | PM2800-095 | Pan Head Tapping Screw | M6x25 | 8 |
| 96 | PM2800-096 | Grounding Sticker | | 1 |
| 97 | PM2800-097 | Tooth Washer | M5 | 2 |
| 98 | TS-1533032 | Phillips Pan Head Machine Screw | M5x10 | 2 |
| 99 | PM2800-99 | Lead Wire Assembly | 14AWG 2.0-160L | 1 |
| 100 | PM2800-100 | Truss Head Tapping Screw | M3x8 | 4 |
| 101 | PM2800-101 | Controller Assembly | 115/230V, 60HZ | 1 |
| 102 | PM2800-102 | Lead Wire Assembly | 14AWG 2.0-160L | 1 |
| 103 | PM2800-103 | Push-Pull Type Switch Assembly | 125V, 20A, 1Ph | 1 |
| 103-1 | PM2800-103-1 | Switch Safety Key | | 1 |
| | PM2800-103SL | Switch Label (not shown) | | 1 |
| 104 | PM2800-104 | Pan Head Tapping Screw | M5x16 | 4 |
| 105 | PM2800-105 | Switch Box | | 1 |
| 106 | TS-1533052 | Phillips Pan Head Machine Screw | M5x16 | 3 |

* *Drill Presses serial # 7040000 and previous, must use complete Table and Bracket Assembly PM2800-TBA. For Drill Presses serial # 7040001 and up, order the individual parts as listed.*

| | | | | |
|---|---|---|---|---|
| 107 | PM2800-107 | LED Lamp Assembly | | 2 |
| 108 | PM2800-108 | LED Lamp Cover | | 2 |
| 109 | PM2800-109 | Feed Shaft Assembly | | 1 |
| 110 | PM2800-110 | Feed Shaft | | 1 |
| 111 | PM2800-111 | Ring | | 1 |
| 112 | PM2800-112 | Hub | | 1 |
| 113 | PM2800-113 | Spring Pin | | 1 |
| 114 | TS-1533032 | Phillips Pan Head Machine Screw | M5x10 | 1 |
| 115 | PM2800-115 | Truss Head Tapping Screw | M2x8 | 2 |
| 116 | PM2800-116 | Photo Interrupt Module | | 1 |
| 117 | PM2800-117 | Bracket | | 1 |
| 118 | PM2800-118 | Washer | | 1 |
| 119 | PM2800-119 | Stop Nut | M16 | 2 |
| 120 | PM2800-120 | Depth Stop Bolt & Scale Assembly | | 1 |
| 121 | PM2800-037 | Drive Screw | Ø2.3-5 mm | 2 |
| 122 | PM2800-122 | Scale | 4-3/8 Inch | 1 |
| 123 | PM2800-123 | Depth Stop Bolt | | 1 |
| 124 | TS-1534092 | Phillips Pan Head Machine Screw | M6x35 | 2 |
| 125 | PM2800-125 | Plunge Housing | | 1 |
| 126 | PM2800-126 | Circular Nut | | 1 |
| 127 | TS-1540071 | Hex Nut | M10 | 1 |
| 128 | PM2800-128 | Set Collar | | 1 |
| 129 | TS-1504051 | Socket Head Cap Screw | M8x25 | 1 |
| 130 | PM2800-130 | Spindle Nut | | 1 |
| 131 | PM2800-131 | Nut Lock | | 1 |
| 132 | PM2800-132 | Washer | | 1 |
| 133 | BB-6203ZZ | Ball Bearing | 6203ZZ | 1 |
| 134 | PM2800-134 | Rubber Washer | | 1 |
| 135 | PM2800-135 | Quill | | 1 |
| 136 | PM2800-136 | Drift Key | | 1 |
| 137 | BB-6205ZZ | Ball Bearing | 6205ZZ | 1 |
| 138 | PM2800-138 | Spindle | | 1 |
| 139 | PM2800-139 | Spindle Assembly | | 1 |
| 140 | PM2800-140 | Arbor | MT2xJT3 | 1 |
| 141 | PM2800-141 | Keyless Chuck | RJ3-16L | 1 |
| 142 | PM2800-142 | Slide Base Assembly | | 4 |
| 143 | PM2800-143 | Slide Base | | 1 |
| 144 | PM2800-144 | Clamp Handle | | 1 |
| 145 | PM2800-145 | Bolt | | 1 |
| 146 | PM2800-146 | Cushion | | 1 |
| 147 | PM2800-147 | Spring Pin | M5x20 | 1 |
| 148 | TS-1541011 | Nylon Lock Hex Nut | M5 | 1 |
| 149 | TS-1533042 | Phillips Pan Head Machine Screw | M5x12 | 8 |
| 150 | PM2800-150 | Drive Sleeve Assembly | | 1 |
| 151 | PM2800-151 | Drive Sleeve | | 1 |
| 152 | PM2800-152 | Collar | | 1 |
| 153 | BB-6205ZZ | Ball Bearing | 6205ZZ | 2 |
| 154 | PM2800-154 | C-Ring | A-25 | 1 |
| 155 | PM2800-155 | Retaining Ring | | 2 |
| 156 | PM2800-021 | Key | 5x5x35 mm | 2 |
| 157 | PM2800-157 | Spring Cap | | 1 |
| 158 | PM2800-158 | Compression Spring | | 2 |
| 159 | PM2800-159 | Pulley | | 2 |
| 160 | PM2800-160 | Variable Speed Belt | 17x8x570 mm | 1 |
| 161 | PM2800-161 | Spring Cap | | 1 |
| 162 | PM2800-162 | Handle | | 3 |
| 163 | PM2800-163 | Handle Grip | | 3 |
| 164 | PM2800-164 | Handle Assembly | | 1 |
| 165 | PM2800-165 | Shift Knob | | 1 |
| 166 | PM2800-166 | O-Ring | P6 | 1 |
| 167 | PM2800-167 | Collar | | 1 |

| | | | | |
|---|---|---|---|---|
| 168 | PM2800-168 | Washer | 1/2”x1-3/64” | 1 |
| 169 | PM2800-169 | Pulley Cover Assembly | | 1 |
| 170 | PM2800-170 | Pulley Cover | | 1 |
| | PM2800-170SSL | Spindle Speed Label (not shown) | | 1 |
| 171 | PM2800-171 | Rivet | 3/16”x27/64” | 4 |
| 172 | PM2800-172 | Set Plate | | 1 |
| 173 | PM2800-173 | Bumper | | 1 |
| 174 | 6714154 | Hex Cap Screw | 1/4”-20x3/8” | 2 |
| 175 | TS-2286402 | Phillips Pan Head Machine Screw | M6x40 | 3 |
| 176 | PM2800-176 | POWERMATIC Name Plate | | 1 |
| 177 | TS-152704 | Hex Wrench | 3 mm | 1 |
| 178 | TS-152706 | Hex Wrench | 5 mm | 1 |
| 179 | TS-152707 | Hex Wrench. | 6 mm | 1 |
| 180 | PM2800-180 | Power Cord | 14AWGx3C | 1 |
| 181 | PM2800-181 | Retaining Ring | | 2 |
| 182 | PM2800-182 | Cover | | 1 |
| 183 | TS-1533042 | Phillips Pan Head Machine Screw | M5x12 | 2 |
| 184 | PM2800L-02 | Guard | | 2 |
| 185 | PM2800L-03 | Laser Assembly | | 2 |
| 186 | PM2800L-04 | Laser Module | | 2 |
| 187 | TS-1523011 | Socket Set Screw | M6x6 | 2 |
| 188 | PM2800L-06 | Laser Housing | | 2 |
| 189 | TS-1523011 | Socket Set Screw | M6x6 | 6 |
| 190 | PM2800L-08 | Laser Plunger Housing | | 2 |

# Electrical Connections



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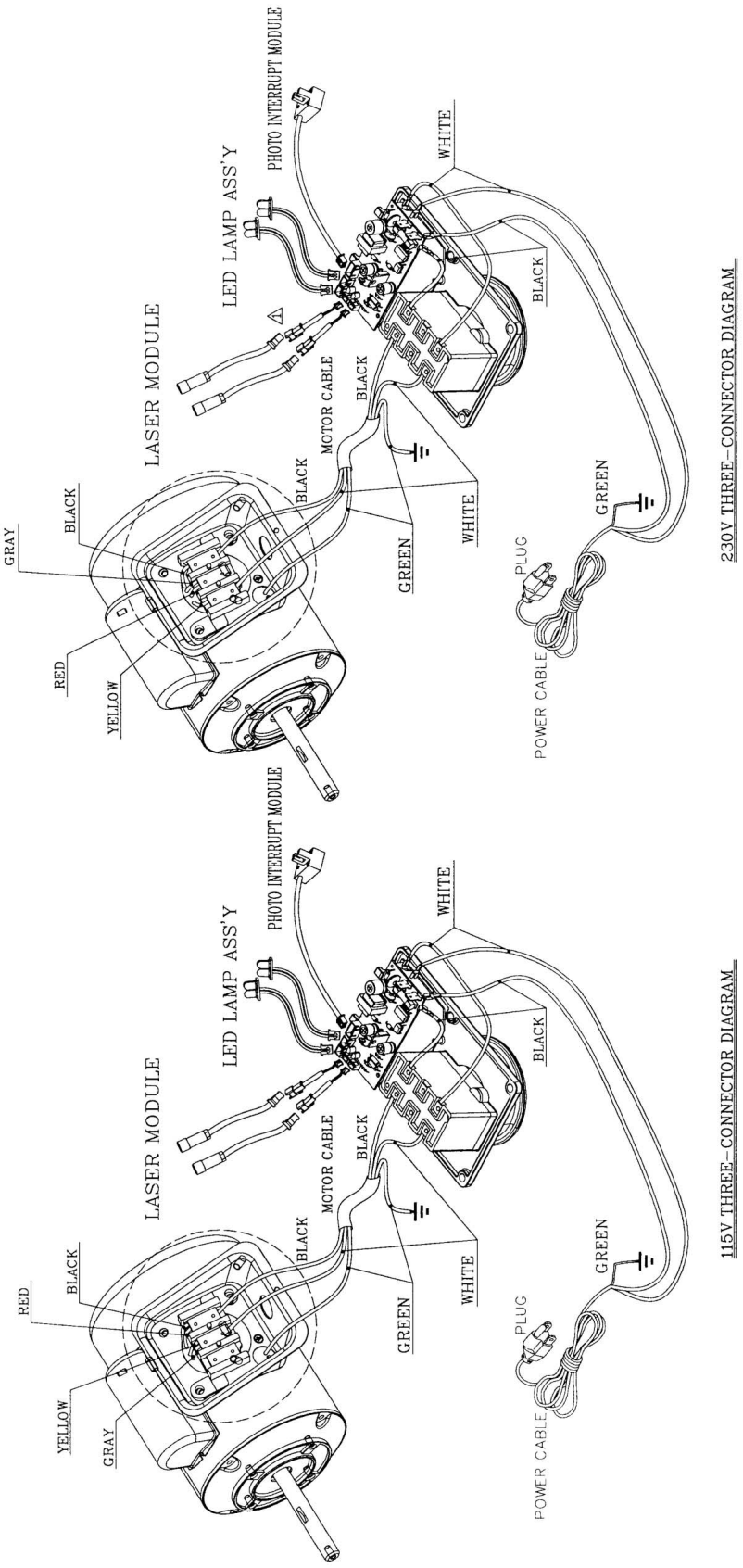

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